

NOTE

UTRICULARIA MYRIOCISTA (LENTIBULARIACEAE)
IN COSTA RICA: A NEW RECORD
FOR CENTRAL AMERICA

GARRETT E. CROW

Department of Plant Biology, University of New Hampshire,
Durham, NH 03824
e-mail: gec@christa.unh.edu

In a taxonomic treatment of the genus *Utricularia* (Lentibulariaceae) in Costa Rica (Crow 1992) I reported a total of 10 species, including a purple-flowered submersed species with whorled branches discovered in 1984 and determined by me as *U. purpurea* Walter. The species was represented in Costa Rica from only a single population in a small pond at Buenos Aires in the southern region of the country. At the time I was aware of only a single, North American species having whorled leaves and purple flowers (Crow and Hellquist 1985), and a range extension from Veracruz, Mexico, and Belize to Costa Rica did not seem unreasonable. Taylor's annotation of the specimens at the Missouri Botanical Garden (MO) concurred with the identity as *U. purpurea* and he included Costa Rica in the range of the species in his monograph of the genus (Taylor 1989).

Subsequent research in wetlands in Bolivia revealed an additional submersed *Utricularia* with purple flowers and whorled leaves that was ultimately identified as *U. myriocista* A. St. -Hil. & Girard. An additional visit to the Buenos Aires population, and comparison with material of *U. purpurea* from New Hampshire [Ritter 4821 (NHA), Crow 9845 (NHA)] and *U. myriocista* from Bolivia [Ritter, Crow, Garvizu & Solíz 4394 (MO, NHA, USZ)], has resulted in a redetermination of the Costa Rican population as *U. myriocista*. Examination of specimens from Belize [Schipp 6006 (F) and Pelly 41 (F)] confirmed that Taylor's (1989) report of *U. purpurea* in that country is correct.

Previously known only from South America, *Utricularia myriocista* is widely distributed in tropical lowlands from Venezuela, Guyana, Surinam, and French Guiana south through Brazil to the lowlands of adjacent northeastern Argentina (Corrientes) and eastern Bolivia (Ritter and Crow 2000; Taylor 1989). Thus, this

represents the first report of *U. myriocista* for Central America as well as Costa Rica.

As noted by Taylor (1989) the differences between the South American *Utricularia myriocista* (Figure 1a, b, c) and North American *U. purpurea* (Figure 1d, e) are small. Both species belong to *Utricularia* L. sect. *Vesiculina* (Raf.) P. Taylor, along with a third, very similar South American taxon, *U. cucullata* A. St. -Hil. & Girard (Venezuela to Brazil; Taylor 1989). All three taxa are submersed aquatic plants with bladder-bearing leaves in whorls of 4–5, the primary segments bearing additional whorls further divided into whorled or opposite capillary segments, with terminal bladders (traps). All have flowers borne solitary or in few-flowered racemes (typically with one flower open at a time), with the corolla light purple to rose-pink; the lower lip 3-lobed with 2 lateral lobes conspicuously saccate. Table 1 compares the distinctive features of the two closely related South American species with the North American taxon. The most distinctive features distinguishing the *U. myriocista* and *U. purpurea* involve the spur, the shape of the lower lip of the corolla, and the attachment of the bracts.

The site of the Costa Rican collection, on the outskirts of Buenos Aires, is a shallow pond less than 1 ha in size, bordered by the road into town as well as several shanties (whose sewage drains to the pond), and is adjacent to a large pineapple field. Once a savanna-like region in the Valle de El General south of San Isidro, the area is now mostly pineapple fields. A second small laguna lies less than 100 m to the north and historical herbarium records of various species from this vicinity suggest that this area may have been dotted with lagunas in the past (Crow 1993).

Based on several visits to the Buenos Aires laguna over the past 16 years, my catalog of the aquatic flora lists 35 species in 17 families (G. E. Crow, unpubl. data). While the diversity may not appear high, this laguna has a rich assemblage of aquatic plants not seen by the author elsewhere in Costa Rica (Crow 1993). In addition to being noteworthy for a new record for *Utricularia myriocista* in both Costa Rica and Central America, the laguna is also home to several other species of *Utricularia*: *U. gibba* L. (common, widely distributed), *U. hydrocarpa* Vahl, another purple-flowered species, often growing mixed with *U. myriocista* (known from only a few localities in Costa Rica), and

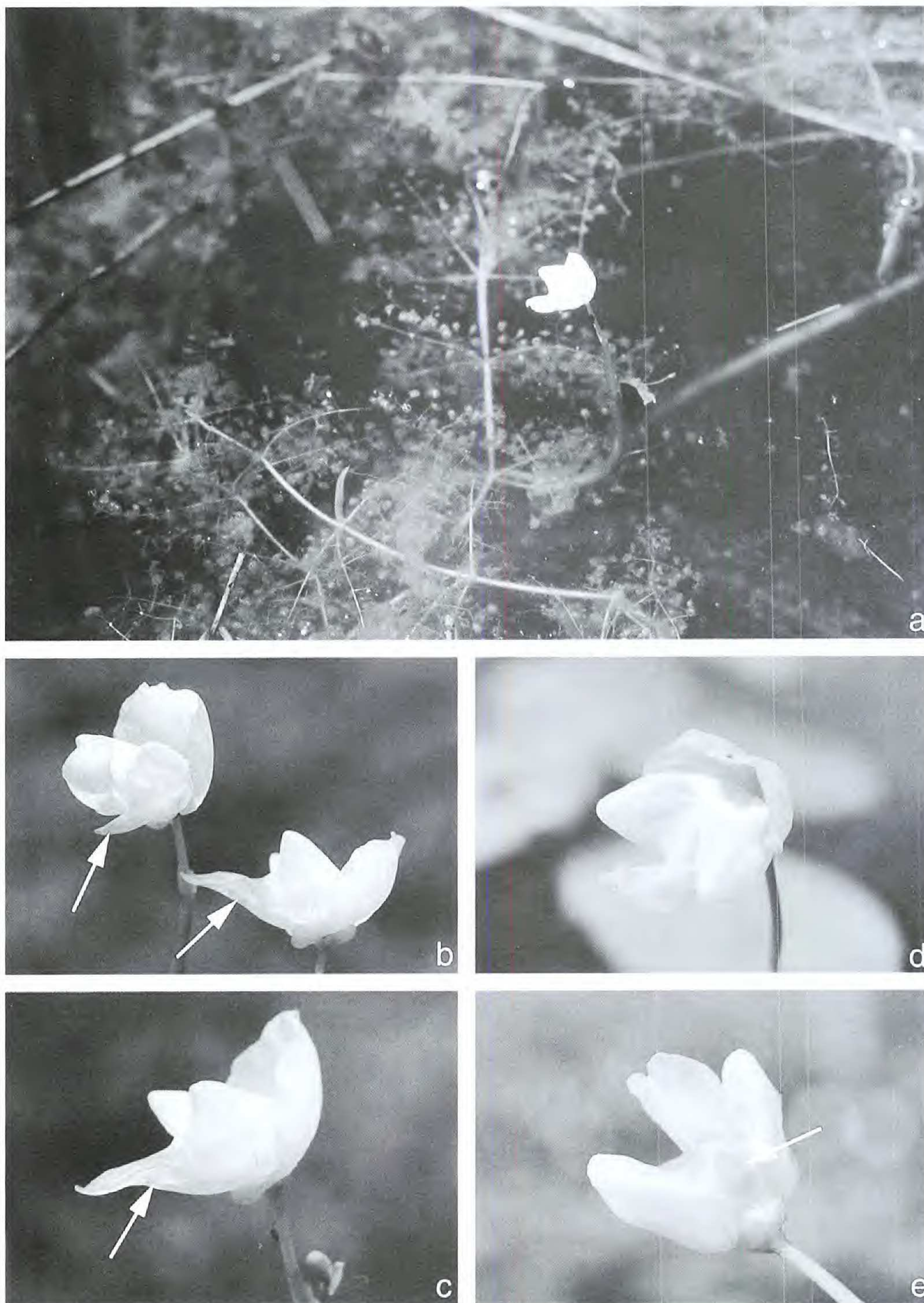


Figure 1. Distinctive features of *Utricularia myriocista* and *U. purpurea* [Crow 9845 (NHA)]. a. *U. myriocista* habit of showing whorled arrangement of leaves [Crow 9682 (NHA)]. b–c. *U. myriocista* flower, showing slender spur with acute apex (arrows) [Crow 9617 (NHA)]. d. *U. purpurea* flower, spur hidden by strongly involute margins of midlobe of lower lip. e. *U. purpurea* flower, view from below showing short-conical spur with obtuse apex (arrow), lying beneath notched lower midlobe.

Table 1. Summary of distinctive comparative features of the taxa of *Utricularia* section *Vesiculina* (adapted primarily from Taylor 1989).

Character	<i>U. purpurea</i>	<i>U. myriocista</i>	<i>U. cucullata</i>
Flowers	1-3	1-5	1-2
Corolla	0.8-1.8 cm long	1-1.7 (-3) cm long	0.4-1.5 cm long
Upper Lip	Nearly circular with apex rounded, broad shallow notch at apex	Nearly circular with apex rounded	Ovate-oblong, with apex rounded, truncate or slightly notched
Lower Lip	Midlobe quadrate (appearing narrowly quadrangular due to strongly revolute margins), the apex truncate and usually notched up to 0.5 mm	Midlobe narrowly ovate, the apex rounded	Midlobe oblong, the apex rounded to subacute
Markings	Yellow spot at base of lower lip in throat of corolla	Yellow spot at base of lower lip in throat of corolla	2 white or yellow spots at base of lower lip in throat of corolla
Spur	Short-conical, apex obtuse; distinctly shorter than lower lip, usually half as long; spur hidden by midlobe	Slender, slightly curved, tapering to acute apex; 2/3 to slightly exceeding the lower lip; spur not hidden by midlobe	Subulate straight or slightly curved, apex subacute or shortly bifid; usually conspicuously exceeding the lower lip; spur not hidden by midlobe
Pediceal Bract	Medifixed (pelate)	Mostly basifixed	More or less medifixed or spurred

U. pusilla Vahl (few sites in the country). Furthermore, several other species in the pond are known only in Costa Rica from this single locality, including *Benjaminia reflexa* (Benth.) D'Arcy, *Eriocaulon schippii* Standl. ex Moldenke, *Ludwigia torulosa* (Arnott) H. Hara, and *Sagittaria rhombifolia* Cham. [the latter of which was initially misidentified and described as a new species, *Echinodorus botanicorum* L. D. Gómez & Gómez-Laur. (1982), with this laguna as the type locality]. Two other species are known only from a few sites in Costa Rica: *Luziola fragilis* Swallen and *Xyris laxifolia* Mart.

This area has long experienced agricultural impacts. However, a new threat may come in the form of flooding upstream from a huge new proposed hydroelectric dam and reservoir project on the Río Grande de Térraba. Although the full extent of flooding has not been determined, according to the newspaper *La Nación* (Ramírez 2000), the area around Buenos Aires is expected to be heavily impacted. Thus, noteworthy as an aquatic site with such a rich assemblage of unique plants, the laguna at Buenos Aires is certainly a locality that should be a high priority for conservation.

Utricularia myriocista A. St. -Hil. & Girard. COSTA RICA. Prov. Puntarenas: Buenos Aires, shallow pond, 9°10'N, 83°20'W, 9 Nov 1984, *Crow* 6175 (CR, F, MO, NHA); 23 Nov 1984, *Crow* 6254 (CR, NHA); 4 Aug 1987, *Crow* 6971 (CR, F, MO, NHA); 18 Aug 1999, *Crow* 9617 (CR, INBIO, MO, NHA); 2 Oct 1999, *Crow* 9682 (CR, INBIO, MO, NHA); laguna, 5 Sep 1984, *Gómez* 24014 (MO); 14 Sep 1985, *Grayum & Herrera* 6066 (MO).

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